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EDEMA

C. L. Schoulties and J. J. McRitchie

Edema, a physiological affliction of numerous plant species, is found most commonly in greenhouses in the northern states, but also occurs frequently in greenhouses and outdoors in Florida. Edema (also oedema) means "a swelling", and this definition accurately describes the abnormal leaf condition.

SYMPTOMS. Symptoms first appear as small blister-like swellings on the leaf undersurface (Fig. 1). These blisters are swollen leaf cells. Later these cells may rupture and become corky. In certain hosts, leaves may yellow and abscise. In other hosts, the effect appears to be minimal and only cosmetic.

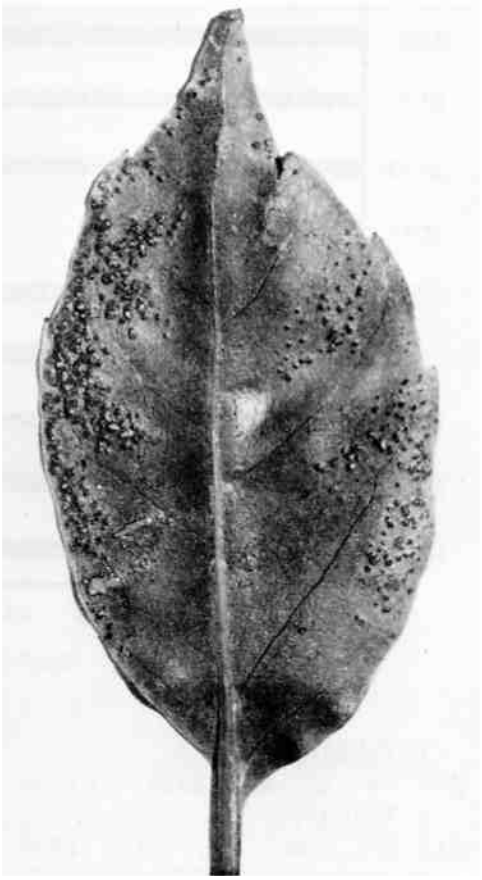


Fig. 1. Physiological edema on a leaflet of schefflera, Brassaia actinophylla Endl. (DPI 702246)

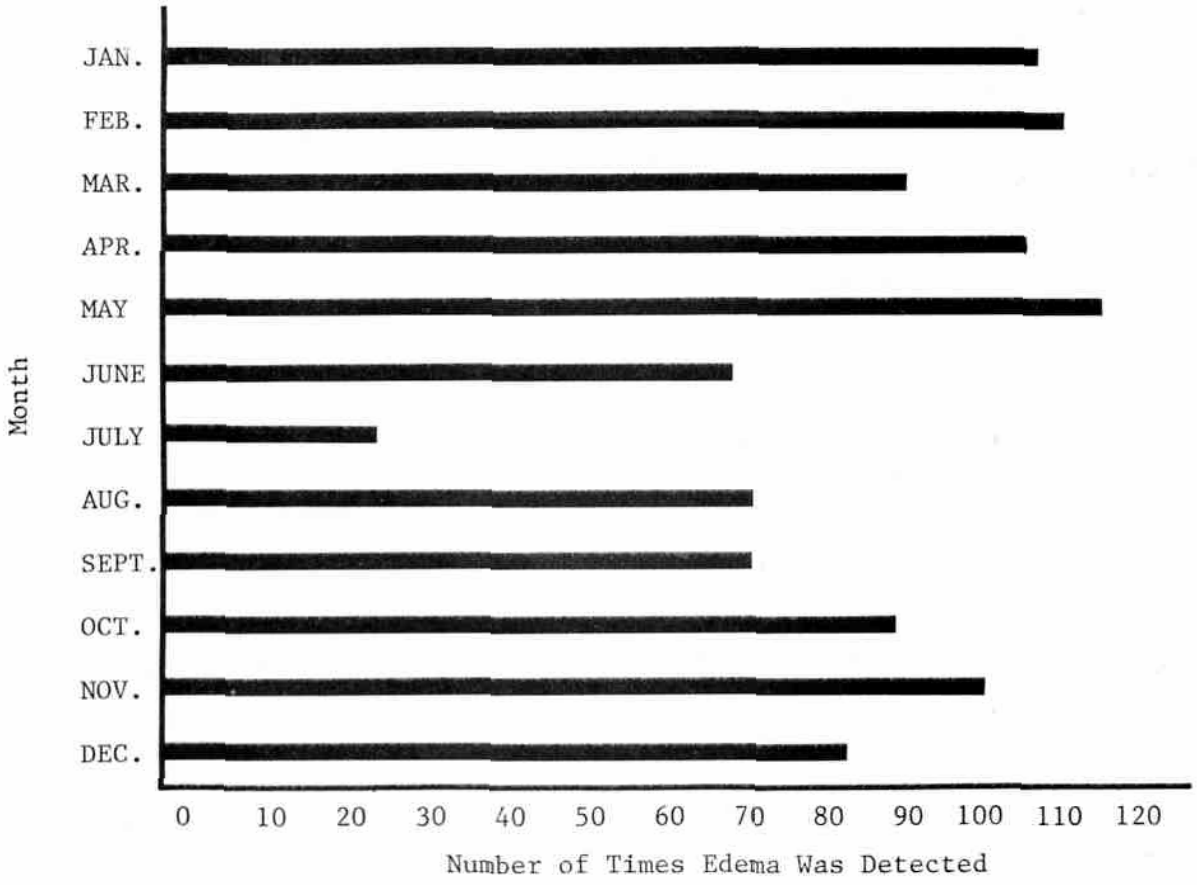
CAUSE. Although a suspected virus (5) and the fungus Cercospora (2) have been associated with edema in Peperomia, it is accepted generally (1, 3, 4) that the cause in the majority of hosts is physiologically related. Certain insects may inflict similar damage.

Edema occurs when an excess of water surrounds the roots, and transpiration from the leaves is impaired. Such conditions occur most frequently in Florida in the spring and fall, when the plant roots remain warm and moist while the leaves are cooled rapidly during the extreme temperature fluctuations we experience during these seasonal months (Fig. 2). It is often found in poorly ventilated greenhouses or when plants are crowded, impairing adequate air circulation.

OCCURRENCE. According to plant disease records of the Division of Plant Industry, edema has been detected on 158 genera of plants, predominantly ornamentals. Plants most sensitive to edema include Pelargonium, Brassaia, Camellia, Peperomia, Hibiscus, Ligustrum, Polyscias, Dracaena, and Fatshedera. In fact, edema is one of the most commonly occurring disorders of Pelargonium.

CONTROL. A leaf will not recover from edema; however, when good growing conditions are provided, new growth should be free from the condition. Edema may be avoided by improving ventilation, increasing the space between plants, and avoiding excess watering.

Fig. 2. Detection of edema by month of year from 1954 to the present. Data from the files of the Bureau of Plant Pathology, Division of Plant Industry, Florida Department of Agriculture & Consumer Services, Gainesville, FL 32602.



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Contribution No. 506, Bureau of Plant Pathology, P. 0. Box 1269, Gainesville, FL 32602.